

Alan Bao

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EDUCATION

University of California, Berkeley *B.S. Electrical Engineering and Computer Sciences*

May 2026

- **GPA:** 3.71 / 4.00
- **Relevant Coursework:** Data Structures, Algorithms, Computer Architecture, Databases, Computer Security, Internet Processes, Machine Learning, Robotics, Probability & Random Processes, Optimization, Numerical Analysis

EXPERIENCE

Capital One *Software Engineer Intern*

June 2025 – August 2025
Plano, TX

- Expedited auto loan approval process by 23% by deploying an accessible graph-based auto-loan decisioning service
- Enabled reactive graph editing in the UI by building a secure REST API endpoint that processes rule files, logs graph and versioning metadata and persists them to S3 and Postgres
- Reduced graph build time by 66% and rebuild time by 14% by designing an optimized AWS Postgres (RDS) schema for necessary graph data and implementing lightweight incremental rebuilds
- Decreased data retrieval time from 8 to 3 seconds by integrating an in-memory cache to eliminate redundant queries
- Shrunk Javascript bundle size by 37% by migrating the UI from Angular to Lit

Rapid Reviews Infectious Diseases

February 2023 – December 2024
Berkeley, CA

Data Science Intern

- Increased preprint review efficiency by 41% by building a classifier that auto-assigns submissions to reviewers by topic
- Delivered weekly trend briefs to 20 reviewers by mining and analyzing 500+ papers for trending research topics
- Streamlined the review processes by manually matching 40-80 reviewers to preprints per week

Hologic

May 2024 – August 2024
San Diego, CA

Software Engineer Intern

- Boosted analytics throughput 70% by architecting the News Aggregation Program (NAP), an automated text mining and classification pipeline that processes 2000+ medical articles per week
- Improved UX and halved article search time to 4 seconds by redesigning NAP's UI and optimizing database queries
- Halved manual research time and surfaced key research priorities by applying topic modeling to 5 years of industry data
- Designed a low latency, department-wide email digest system, automatically sending 100+ targeted summaries biweekly

UC Berkeley Electrical Engineering and Computer Sciences

January 2023 – August 2024
Berkeley, CA

Tutor

- Delivered lectures and weekly tutoring to 50+ students on core and advanced computer science topics, including data structures, algorithms and graph theory
- Improved student performance through providing whiteboarding sessions and code debugging support

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, Golang, C, C++, Javascript, Typescript, SQL
- **Libraries & Frameworks:** React, REST API, Pytorch, Angular
- **Platform & Tools:** Git, AWS, Linux, Docker

PROJECTS

Cooperative Drone Autonomy Platform | *Python, C++, ROS2*

- Built a distributed ROS2 system managing perception, planning and control for a two-drone autonomous delivery system
- Enabled autonomous navigation with 0.5-meter payload accuracy by implementing a perception pipeline to create navigable maps synchronously communicated between both drones

UC Berkeley Assist Tool | *Python, React, Javascript, Selenium, HTML, CSS*

- Collected 6000+ course articulations in under 14 minutes by automating data collection through web scraping
- Implemented a React web application that helps students instantly research transferable courses from all 116 California Community Colleges to UC Berkeley

Image Editor | *Python, OpenCV, Scikit-Learn, Scipy*

- Built a Python image editing tool that uses computer vision techniques to sharpen, align, crop, blend and morph images
- Derived and tailored image processing algorithms and Gaussian and Laplacian pyramids for more visually accurate results